MISSILE DEFENSE AGENCY

Fact Sheet

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Upgraded Early Warning Radars

Three Air Force Early Warning Radars (Beale, California; Fylingdales, United Kingdom; Thule, Greenland) and the Air Force COBRA DANE (Shemya, Alaska) radars have or are being upgraded to modernize radar hardware and software and to integrate the radars into the Ballistic Missile Defense System. The upgrades will improve midcourse Ballistic Missile Defense System sensor coverage by providing critical early warning, tracking and cueing data while retaining legacy missile warning and space track missions. The Beale and COBRA DANE upgrades are complete. The upgrade to the Fylingdales radar will be completed in 2008. The Thule, Greenland site will be integrated into the Ballistic Missile Defense System in fiscal year 2010.

Overview

- Solid state, phased array, all weather, long-range radars
- Provide Integrated Tactical Warning / Attack Assessment
- Supports Space Surveillance Network
  - Detects, identifies, and tracks man-made objects in Earth orbit
- Provide midcourse coverage for Ballistic Missile Defense System
  - Detects sea-launched or intercontinental ballistic missiles
  - Provides estimated launch and impact points
  - Classifies reentry vehicle and other space objects
  - Real-time information to interceptors
  - Launch commit quality tracking for threats

Details

- One (COBRA DANE), two (Beale, Thule), or three (Fylingdales) radar faces. Each face provides 120° coverage.
- Each face is approximately 95 feet; radars are 120 feet high
- Detects objects out to 3000 miles
- Cobra Dane operates in L-Band. Beale, Fylingdales and Thule operate in Very High Frequency Band

Development

- Upgraded Early Warning Radars (Beale, Fylingdales, Thule): Replaced all back-end processing hardware; provided new communications equipment; rewrote 750,000 software lines of code. Retained original radar array face. Continued early warning and tracking missions during upgrade.
- COBRA DANE: Replaced all back-end processing hardware; provided new communications equipment; rewrote 135,000 software lines of code. Retained original radar array face. Continued missile tracking missions during upgrade.